Landslide Prone Areas

Issue

While the State has adopted more protective forestry rules to reduce landslide risks to life and property and promotes some voluntary practices to reduce landslide risks through the Oregon

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Background

Oregon proposed to address this element of the additional management measures for forestry condition through a mix of regulatory and voluntary approaches. While Oregon adopted more protective forestry rules to reduce landslide risks to life and property and promoted some voluntary practices to reduce landslide risks through the Oregon Plan for Salmon and Watersheds (The Oregon Plan), Oregon still does not have additional management measures for forestry in place to protect water quality and designated uses from landslide impacts.

Since January 13, 1998, Oregon amended the Oregon FPA rules to require the identification of landslide hazard areas in timber harvesting plans and road construction (OAR 629-623-0000 through 629-623-0800). However, under these amendments, shallow, rapidly moving landslide hazards directly related to forest practices are addressed only as they relate to risks for losses of life and property, not for potential water quality impacts. Oregon still allows timber harvest on landslide hazard areas if the harvest will not cause a public safety risk and construction of roads on landslide hazard areas where alternatives are not available.

As noted in the January 13, 1998, findings, timber harvests on unstable, steep terrain can result in increases in landslide rates which contribute to water quality impairments. A number of studies continue to show significant increases in landslide rates after clear-cutting compared to unmanaged forests in the Pacific Northwest.

For example, in the 2000 study, "Forest Clearing and Regional Landsliding," Montgomery et. al., concluded that landslide rates in Mettman Ridge in the Oregon Coast Range increased after clear cutting at a rate of three to nine times the background rate for the region. The regional analysis from this study found that forest clearing dramatically accelerates shallow landsliding in steep terrain typical of the Pacific Northwest.

In its July 1, 2013, submittal Oregon also cited a limited study by Turner et al. (2010), indicating that at higher rainfall intensities, significantly higher landslide densities occurred on steep slopes compared to lower gradient slopes. Turner et al. (2010) also found that the effect of stand age was strongest at higher rainfall intensities, concluding that the density of landslides in the most recently harvested sites were roughly 2-3 times larger than older stands.

To meet the additional management measure relating to high-risk landslide prone areas, the

State must adopt similar harvest and road construction restrictions for all high-risk landslide prone areas with the potential to impact water quality and designated uses, not just those areas where landslides pose risks to life and property.

The State employs a voluntary measure under the Oregon Plan that gives landowners credit for leaving standing live trees along landslide prone areas as a source of large wood. The large wood, which may eventually be deposited into stream channels, contributes to stream complexity, a key limiting factor for coastal coho salmon recovery.

While Oregon desires to better capture and evaluate the implementation and effectiveness of

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to use voluntary programs to support its coastal nonpoint program (see the federal agencies' 1998 Final Administrative Changes guidance).

Action Options & Recommendation

Landslide Prone Areas~~:~~

Comment [CJ1]: When developing the issue paper, state upfront the issue to be resolved and the decision which needs to be made by our management. See potential text below.

Issue

While the State has adopted more protective forestry rules to reduce landslide risks to life and property and promotes some voluntary practices to reduce landslide risks through the Oregon

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Background

Comment [CJ2]: When developing the issue paper, consider including an attachment which provides the more detailed information and also includes studies. Also make sure to include the arguments made by the opposing side and how we address them. In this section, be sure to cover:

- What are the impacts or significance of the issue?
- What are the constraints?
- Who is impacted by the issue?
- What are the risks of not resolving the issue?

Oregon proposed to address this element of the additional management measures for forestry condition through a mix of regulatory and voluntary approaches. While Oregon~~the State has~~ adopted more protective forestry rules to reduce landslide risks to life and property and promote~~d~~s some voluntary practices to reduce landslide risks through the Oregon Plan for Salmon and Watersheds (The Oregon Plan), Oregon~~it~~ still does not have additional management measures for forestry in place to protect water quality and designated uses from landslide impacts.
~~high risk landslide areas to ensure that water quality standards and designated uses are achieved.~~

Since January 13, 1998, Oregon ~~has~~ amended the Oregon FPA rules to require the identification of landslide hazard areas in timber harvesting plans and road construction (OAR 629-623-0000 through 629-623-0800). However, under these amendments, shallow, rapidly moving landslide hazards directly related to forest practices are addressed only as they relate to risks for losses of life and property, not for potential water quality impacts. Oregon still allows timber harvest on~~f~~ landslide hazard areas ~~high-risk sites~~ if the harvest ~~that~~ will not cause a public safety risk and construction of roads on landslide hazard areas~~high-risk sites~~ where alternatives are not available.

As noted in the January 13, 1998, findings, timber harvests on unstable, steep terrain can result in increases in landslide rates which contribute to water quality impairments. A number of studies continue to show significant increases in landslide rates after clear-cutting compared to unmanaged forests in the Pacific Northwest.

Comment [CJ3]: You described two studies: 2010 & 2000. Where can the others be found? Also would be helpful to explicitly link the 2010 & 2000 study results to the deficiencies in Oregon's program (i.e. 2000 study indicates Oregon should consider developing MMs to prevent clear cutting in landslide hazard areas or 2010 study indicates Oregon should consider developing MMs needed to prevent harvesting of younger trees in steep slopes with certain amount of rainfall …).

For example, in the 2000 study, "Forest Clearing and Regional Landsliding," Montgomery et. al., concluded that landslide rates in Mettman Ridge in the Oregon Coast Range increased after clear cutting at a rate of three to nine times the background rate for the region. The regional analysis from this study found that forest clearing dramatically accelerates shallow landsliding in steep terrain typical of the Pacific Northwest.

In its July 1, 2013, submittal Oregon also cited~~s~~ a limited study by Turner et al. (2010), indicating that at higher rainfall intensities, significantly higher landslide densities occurred on steep slopes compared to lower gradient slopes. Turner et al. (2010) also found that the effect of stand age

Comment [CJ4]: May consider explaining or defining "stand age" for the general reader.

was strongest at higher rainfall intensities, concluding that the density of landslides in the most recently harvested sites were roughly 2-3 times larger than older stands.

To meet the additional management measure relating to high-risk landslide prone areas, the State must adopt similar harvest and road construction restrictions for all high-risk landslide prone areas with the potential to impact water quality and designated uses, not just those areas where landslides pose risks to life and property.

The State employs a voluntary measure under the Oregon Plan that gives landowners credit for leaving standing live trees along landslide prone areas as a source of large wood. The large wood, which may eventually be deposited into stream channels, contributes to stream complexity, a key limiting factor for coastal coho salmon recovery.

WHowever, while Oregon has professed a desires to better capture and evaluate the

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measure. These are required elements if a state chooses to use voluntary programs to support its coastal nonpoint program (see the federal agencies' 1998 Final Administrative Changes guidance).

Comment [CJ5]: May want to briefly list/describe the required elements a voluntary approach and then evaluate which ones Oregon has addressed and has not addressed.

Action Options & Recommendation

Comment [CJ6]: When developing the issue paper, include this section in which you explore the various options (approve, disapprove, make no decision) and make a recommendation. Explain why you are not recommending other options. In this section, consider covering:

- What are the options and how do these options address the issue?
- Discuss the pro's and con's and consequences of the various options.
- What are the opposing arguments (whether they've been made or could be made).
- Financial implications?
- Precedent implications?
- Political implications?